WHAT IS CLAIMED IS:

1. A digital signal transmission apparatus comprising:

a multiplexer having an output port, an input port for inputting an information bit-stream and an input port for inputting a placeholder bit-stream, for multiplexing the bit-streams inputted from the input ports to form a multiplexed bit-stream for output on the output port;

a data formatter for receiving the multiplexed bit-stream and for replacing bits of said placeholder bit-stream within the received multiplexed bit-stream with bits derived from said information bit-stream within said received multiplexed bit-stream to form a modified bit-stream;

an encoder for encoding the modified bit-stream to produce an encoded bit-stream; and

a transmitter for transmitting the encoded bit-stream.

2. The apparatus of claim 1, wherein the deriving creates a new bit, but retains any bit from which derivation has occurred.

3. The apparatus of claim 2, wherein said replacing comprises duplicating bits of said information bit-stream within said received multiplexed bit-stream to form

duplicate bits and substituting the duplicate bits to replace bits of said placeholder bit-stream within said received multiplexed bit-stream.

4. The apparatus of claim 1, wherein the multiplexer is configured to multiplex an additional bit-stream in forming said multiplexed bit-stream, the data formatter is configured to bypass said replacing when operating on said additional bit-stream within said received multiplexed bit-stream to form said modified bit-stream, and the encoder is configured to process every bit of said modified bit-stream when operating on bits derived from said additional bit-stream and to process every other bit of said modified bit-stream when operating on bits derived from said information bit-stream.

5. The apparatus of claim 1, wherin the multiplexer is configured with an additional input port for inputting an additional bit-stream.

6. The apparatus of claim 5, the multiplexer being configured to input a plurality of additional bit-streams, a plurality of information bit-streams and a plurality of placeholder bit-streams through their respective input ports for said multiplexing to form said multiplexed

bit-stream, each of the information bit-streams to be multiplexed by the multiplexer having an identical number of bits, each of the placeholder bit-streams to be multiplexed by the multiplexer having an identical number of bits, the multiplexer being configured to multiplex each of the information and placeholder bit-streams for their respective identical number of bits before selecting another bit-stream for multiplexing.

7. The apparatus of claim 6, wherein said multiplexer is further configured to perform said multiplexing so as to select in succession, over a predetermined number of bit-streams, no more than three of said additional bit-streams.

8. The apparatus of claim 6 wherein said multiplexer is further configured to perform said multiplexing so as to input in succession one or more of the additional bit-streams after each input of one of an information bit-stream and a placeholder bit-stream.

9. The apparatus of claim 8, wherein the plural bit-streams are identical in length, and the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one

information or placeholder bit-stream, between an information bit-stream and a placeholder bit-stream.

10. The apparatus of claim 1, wherein said replacing comprises removing selected bits from said information bit-stream within said received multiplexed bit-stream and substituting the removed bits to replace bits of said placeholder bit-stream within said received multiplexed bit-stream.

11. A digital signal transmission method comprising the steps of:

multiplexing an information bit-stream and a placeholder bit-stream to form a multiplexed bit-stream;

receiving the multiplexed bit-stream;

replacing bits of said placeholder bit-stream within the received multiplexed bit-stream with bits derived from said information bit-stream within said received multiplexed bit-stream to form a modified bit-stream;

encoding the modified bit-stream to produce an encoded bit-stream; and

transmitting the encoded bit-stream.

12. The method of claim 11, wherein the deriving creates a new bit, but retains any bit from which derivation has occurred.

13. The method of claim 12, wherein the replacing step comprises the steps of:

duplicating bits of said information bit-stream within said received multiplexed bit-stream to form duplicate bits; and

substituting the duplicate bits to replace bits of said placeholder bit-stream within said received multiplexed bit-stream.

14. The method of claim 11, further comprising the steps of:

multiplexing an additional bit-stream in forming said multiplexed bit-stream; and

bypassing said replacing step when operating on said additional bit-stream within said received multiplexed bit-stream to form said modified bit-stream;

wherein said encoding step further comprises the steps of:

processing every bit of said modified bit-stream when operating on bits derived from said additional bit-stream; and

processing every other bit of said modified bit-stream when operating on bits derived from said information bit-stream.

15. The method of claim 11, wherein the multiplexing step further comprises multiplexing an additional bit-stream to form said multiplexed bit-stream.

16. The method of claim 15, wherein said multiplexing step comprises multiplexing a plurality of additional bit-streams, a plurality of information bit-streams, and a plurality of placeholder bit-streams to form said multiplexed bit-stream, each of said information bit-streams to be multiplexed by the multiplexer having an identical number of bits, each of said placeholder bit-streams to be multiplexed by the multiplexer having an identical number of bits, the multiplexing step being performed so as to multiplex each of the information and placeholder bit-streams for their respective identical number of bits before selecting another bit-stream for multiplexing.

17. The method of claim 16, wherein said multiplexing step is performed so as to select in succession, over a predetermined number of bit-streams, no more than three of said additional bit-streams.

18. The method of claim 16 wherein the multiplexing step multiplexes so as to input in succession one or more of the additional bit-streams after each input of one of an information bit-stream and a placeholder bit-stream.

19. The method of claim 18, wherein the plural bit-streams are identical in length, and the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one information or placeholder bit-stream, between an information bit-stream and a placeholder bit-stream.

20. The method of claim 11, wherein the replacing step comprises the steps of:

selecting bits from said information bit-stream within said received multiplexed bit-stream;

removing the selected bits from said information bit-stream within said multiplexed bit-stream; and

substituting the removed bits to replace bits of said placeholder bit-stream within said received multiplexed bit-stream.